

Jun'ichi Yokoyama, JGRG 22(2012)111200

“Opening address”

---

**RESCEU SYMPOSIUM ON  
GENERAL RELATIVITY AND GRAVITATION**

**JGRG 22**

November 12-16 2012

Koshiba Hall, The University of Tokyo, Hongo, Tokyo, Japan



# **RESCEU** SYMPOSIUM ON GENERAL RELATIVITY AND GRAVITATION



also known as  
**JGRG22**

which is

“The 22<sup>nd</sup> Workshop on General Relativity and Gravitation in Japan”

**November 12 - 16 2012**

**Koshiba Hall, The University of Tokyo, Hongo, Tokyo, Japan**

Welcome address by

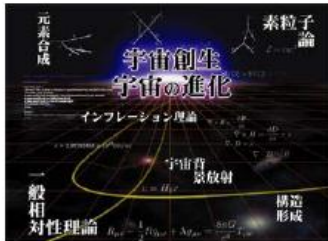
# Professor Hiroaki Aihara Dean of School of Science



東京大学 大学院  
理学系研究科・理学部

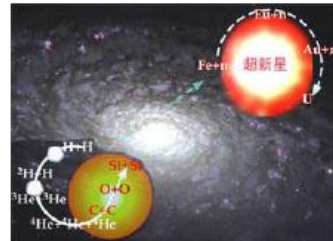
SCHOOL OF SCIENCE, THE UNIVERSITY OF TOKYO

# RESCEU Projects



PROJECT 1

Very Early Universe and Large-scale Structure



PROJECT 2

Theory of Galaxy Evolution



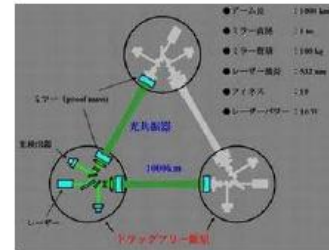
PROJECT 3

Formation and evolution of galaxies and clusters of galaxies



PROJECT 4

Submillimeter-wave Observation



PROJECT 5

Search for Gravitational Waves



PROJECT 6

direct search for dark matter and solar axions



PROJECT 7

Researches using Space-Borne Instruments

# RESCEU International Symposia



The 1st RESCEU International Symposium:

"The Cosmological Constant and the Evolution of the Universe" (11/7-10, 1995)

The 2nd RESCEU International Symposium:

"Dark Matter in the Universe and its Direct Detection" (11/26-28, 1996)

The 3rd RESCEU International Symposium:

"Particle Cosmology" (11/11-13, 1997)

The 4th RESCEU International Symposium:

"The Birth and Evolution of the Universe" (11/16-19, 1999)

The 5th RESCEU International Symposium:

"New Trends in Theoretical and Observational Cosmology" (11/13-16, 2001)

The 6th RESCEU International Symposium:

"Frontier in Astroparticle Physics and Cosmology" (11/4-7, 2003)

The 59th Yamada conference

"Inflating horizon of particle astrophysics and cosmology " (6/20-24, 2005)

The 7th RESCEU International Symposium:

"Astroparticle Physics and Cosmology" (11/11-14, 2008)

The 8th RESCEU International Symposium, Horiba international conference:

"COSMO/CosPA 2010" (9/27-10/1, 2010)

Construction of KAGRA started in January, 2012.

# KAGRA



# Construction of KAGRA started in January, 2012.

## KAGRA



Gifu prefecture  
Hida city



Construction of KAGRA started in January, 2012.

## KAGRA



Gifu prefecture  
Hida city



Takaaki Kajita “Status of **KAGRA**”

Francesco Fidecaro “**Virgo**: design, results and perspectives”

David Reitze “**LIGO**: Recent Results, Plans, and Prospects”

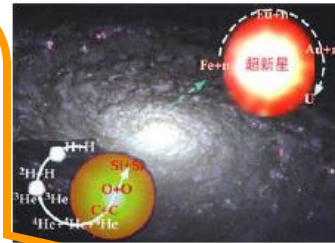


# RESCEU Projects



PROJECT 1

Very Early Universe and Large-scale Structure



PROJECT 2

Theory of Galaxy Evolution



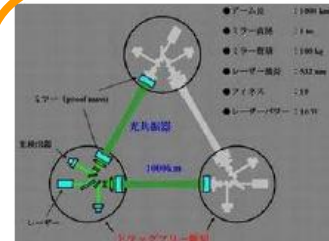
PROJECT 3

Formation and evolution of galaxies and clusters of galaxies



PROJECT 4

Submillimeter-wave Observation



PROJECT 5

Search for Gravitational Waves



PROJECT 6

direct search for dark matter and solar axions



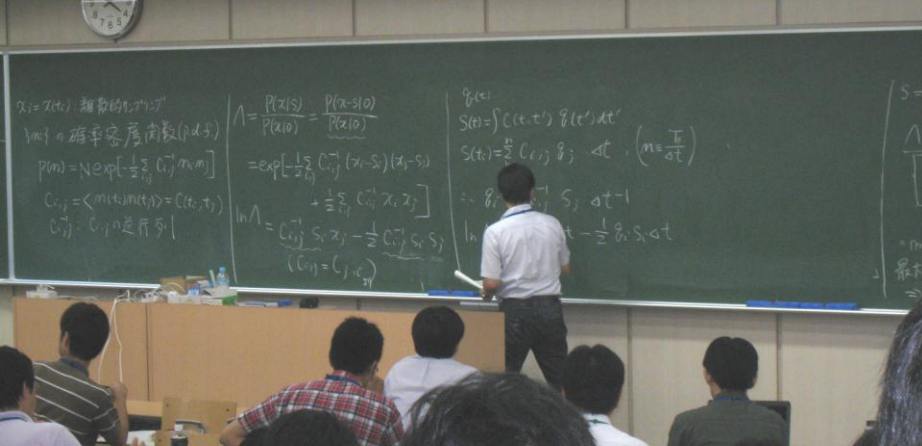
PROJECT 7

Researches using Space-Borne Instruments

jointly organized  
KAGRA data  
analysis school  
@RESCEU



Yousuke Itoh  
@RESCEU



# Lectures by Dr. H. Tagoshi



## Programming Practice



Until very late at night!

# History of JGRG

- JGRG1** (Tokyo Metropolitan University, 12/4-6, 1991)
- JGRG2** (Waseda University, 1/18-20, 1993)
- JGRG3** (The University of Tokyo, 1/17-20, 1994)
- JGRG4** (YITP, Kyoto University, 11/28-12/1, 1994)
- JGRG5** (Nagoya University, 1/22-25, 1996)
- JGRG6** (Tokyo Institute of Technology, 12/2-5, 1996)
- JGRG7** (YITP, Kyoto University, 10/27-30, 1997)
- JGRG8** (Niigata University, 10/19-22, 1998)
- JGRG9** (Hiroshima University, 11/3-6, 1999)
- JGRG10** (Osaka University, 9/11-14, 2000)
- JGRG11** (Waseda University, 1/9-12, 2002)
- JGRG12** (Komaba, The University of Tokyo, 11/25-28, 2002)
- JGRG13** (Osaka City University, 12/1-4, 2003)
- JGRG14** (YITP, Kyoto University, 11/29-12/3, 2004)
- JGRG15** (Tokyo Institute of Technology, 11/28-12/2, 2005)
- JGRG16** (Niigata Prefectural Center, 11/27-12/1, 2006)
- JGRG17** (Nagoya University, 12/3-7, 2007)
- JGRG18** (Hiroshima University, 11/17-21, 2008)
- JGRG19** (Rikkyo University, 11/30-12/4, 2009)
- JGRG20** (YITP, Kyoto University, 9/21-25, 2010)
- JGRG21** (Tohoku University, 9/26-29, 2011)
- JGRG22** (RESCEU, 11/12-16, 2012)

**JGRG1** (Tokyo Metropolitan University, 12/4-6, 1991)

**JGRG2** (Waseda University, 1/18-20, 1993)

**JGRG3** (The University of Tokyo, 1/17-20, 1994)

**JGRG4** (YITP, Kyoto University, 11/28-12/1, 1994)

**JGRG5** (Nagoya University, 1/22-25, 1996)

**JGRG6** (Tokyo Institute of Technology, 12/2-5, 1996)

**JGRG7** (YITP, Kyoto University, 10/27-30, 1997)

**JGRG8** (Niigata University, 10/19-22, 1998)

**JGRG9** (Hiroshima University, 11/3-6, 1999)

**JGRG10** (Osaka University, 9/11-14, 2000) → International (English)

**JGRG11** (Waseda University, 1/9-12, 2002)

Sasaki & JY

**JGRG12** (Komaba, The University of Tokyo, 11/25-28, 2002)

**JGRG13** (Osaka City University, 12/1-4, 2003)

**JGRG14** (YITP, Kyoto University, 11/29-12/3, 2004)

**JGRG15** (Tokyo Institute of Technology, 11/28-12/2, 2005)

**JGRG16** (Niigata Prefectural Center, 11/27-12/1, 2006)

**JGRG17** (Nagoya University, 12/3-7, 2007)

**JGRG18** (Hiroshima University, 11/17-21, 2008)

**JGRG19** (Rikkyo University, 11/30-12/4, 2009)

**JGRG20** (YITP, Kyoto University, 9/21-25, 2010)

**JGRG21** (Tohoku University, 9/26-29, 2011)

**JGRG22** (RESCEU, 11/12-16, 2012)

**JGRG1** (Tokyo Metropolitan University, 12/4-6, 1991)

**JGRG2** (Waseda University, 1/18-20, 1993)

**JGRG3** (The University of Tokyo, 1/17-20, 1994)

**JGRG4** (YITP, Kyoto University, 11/28-12/1, 1994)

**JGRG5** (Nagoya University, 1/22-25, 1996)

**JGRG6** (Tokyo Institute of Technology, 12/2-5, 1996)

**JGRG7** (YITP, Kyoto University, 10/27-30, 1997)

**JGRG8** (Niigata University, 10/19-22, 1998)

**JGRG9** (Hiroshima University, 11/3-6, 1999)

**JGRG10** (Osaka University, 9/11-14, 2000)

**JGRG11** (Waseda University, 1/9-12, 2002)

**JGRG12** (Komaba, The University of Tokyo, 11/25-28, 2002)

**JGRG13** (Osaka City University, 12/1-4, 2003)

**JGRG14** (YITP, Kyoto University, 11/29-12/3, 2004)

**JGRG15** (Tokyo Institute of Technology, 11/28-12/2, 2005)

**JGRG16** (Niigata Prefectural Center, 11/27-12/1, 2006)

**JGRG17** (Nagoya University, 12/3-7, 2007)

**JGRG18** (Hiroshima University, 11/17-21, 2008)

**JGRG19** (Rikkyo University, 11/30-12/4, 2009)

**JGRG20** (YITP, Kyoto University, 9/21-25, 2010) 60<sup>th</sup> anniversary of

**JGRG21** (Tohoku University, 9/26-29, 2011)

Nakamura & Maeda

**JGRG22** (RESCEU, 11/12-16, 2012)

**JGRG1** (Tokyo Metropolitan University, 12/4-6, 1991)

**JGRG2** (Waseda University, 1/18-20, 1993)

**JGRG3** (The University of Tokyo, 1/17-20, 1994)

**JGRG4** (YITP, Kyoto University, 11/28-12/1, 1994)

**JGRG5** (Nagoya University, 1/22-25, 1996)

**JGRG6** (Tokyo Institute of Technology, 12/2-5, 1996)

**JGRG7** (YITP, Kyoto University, 10/27-30, 1997)

**JGRG8** (Niigata University, 10/19-22, 1998)

**JGRG9** (Hiroshima University, 11/3-6, 1999)

**JGRG10** (Osaka University, 9/11-14, 2000)

**JGRG11** (Waseda University, 1/9-12, 2002)

**JGRG12** (Komaba, The University of Tokyo, 11/25-28, 2002)

**JGRG13** (Osaka City University, 12/1-4, 2003)

**JGRG14** (YITP, Kyoto University, 11/29-12/3, 2004)

**JGRG15** (Tokyo Institute of Technology, 11/28-12/2, 2005)

**JGRG16** (Niigata Prefectural Center, 11/27-12/1, 2006)

**JGRG17** (Nagoya University, 12/3-7, 2007)

**JGRG18** (Hiroshima University, 11/17-21, 2008)

**JGRG19** (Rikkyo University, 11/30-12/4, 2009)

**JGRG20** (YITP, Kyoto University, 9/21-25, 2010)

**JGRG21** (Tohoku University, 9/26-29, 2011)

**JGRG22** (RESCEU, 11/12-16, 2012) 60<sup>th</sup> anniversary of Kodama, Futamase,  
and Sasaki (special lectures on Thurs.)

**JGRG1** (Tokyo Metropolitan University, 12/4-6, 1991)  
**JGRG2** (Waseda University, 1/18-20, 1993)  
**JGRG3** (The University of Tokyo, 1/17-20, 1994)  
**JGRG4** (YITP, Kyoto University, 11/28-12/1, 1994)  
**JGRG5** (Nagoya University, 1/22-25, 1996)  
**JGRG6** (Tokyo Institute of Technology, 12/2-5, 1996)  
**JGRG7** (YITP, Kyoto University, 10/27-30, 1997)  
**JGRG8** (Niigata University, 10/19-22, 1998)  
**JGRG9** (Hiroshima University, 11/3-6, 1999)  
**JGRG10** (Osaka University, 9/11-14, 2000)  
**JGRG11** (Waseda University, 1/9-12, 2002)  
**JGRG12** (Komaba, The University of Tokyo, 11/25-28, 2002)  
**JGRG13** (Osaka City University, 12/1-4, 2003)  
**JGRG14** (YITP, Kyoto University, 11/29-12/3, 2004)  
**JGRG15** (Tokyo Institute of Technology, 11/28-12/2, 2005)  
**JGRG16** (Niigata Prefectural Center, 11/27-12/1, 2006)  
**JGRG17** (Nagoya University, 12/3-7, 2007)  
**JGRG18** (Hiroshima University, 11/17-21, 2008)  
**JGRG19** (Rikkyo University, 11/30-12/4, 2009)  
**JGRG20** (YITP, Kyoto University, 9/21-25, 2010)  
**JGRG21** (Tohoku University, 9/26-29, 2011)  
**JGRG22** (RESCEU, 11/12-16, 2012)

**JGRG33**

# Social Events

Reception: Today from 18:30 @ Sanjo Conference Hall

Poster & Beer: Tomorrow from 16:30 here  
(Beer will be served after 17:00)

Self-service Excursion and Banquet: Thursday evening  
@Ooedo Onsen Monogatari in Odaiba  
(Hot springs with Edo-era(1603-1867) Style)

A free shuttle bus is available for non-Japanese speaking participants and invited speakers.

Japanese participants, please come by yourselves.  
丸ノ内線本郷三丁目から新橋乗り換えゆりかもめでテレコム  
センター下車徒歩2分。

Please show your name tag at the entrance



# Welcome to Ooedo-Onsen-Monogatari



Dress code: Since you will be requested to wear a Edo-era style *Yukata* robe in the premise, please come in casual clothes. Wearing neckties and jackets is discouraged.



A New Attempt in the 22 years' history of JGRG

# Launching JGRG Presentation Award

Participants who attended until the end of each parallel session have a right to vote for one talk in the session.

For the poster award, participants who participated in the discussion until 18:30 on Tuesday have a right to vote for one poster presentation.

Based on the results of the votes and recommendation by parallel session chairs, the selection committee consisting of the organizing committee members will decide who will be awarded.

In case you wish to move from one parallel room to the other? No problem, just vote for one of the talks you attended regardless of the room where you are at the end of the day.

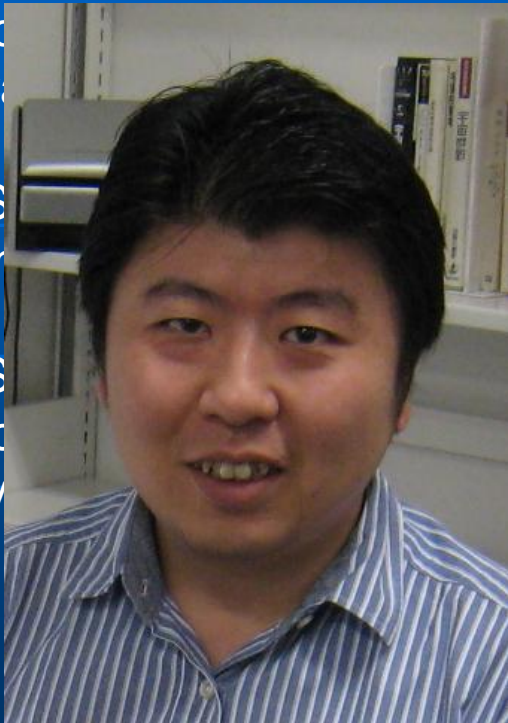
# Supported by

MEXT Grant-in-Aid for Scientific Research on Innovative Areas No. 21111006  
“Quest for the Ultimate Theory on the Basis of Direct Observations of the Evolution of the Early Universe” (Kodama & JY)

MEXT Grant-in-Aid for Scientific Research on Innovative Areas, No. 24103006  
“Theory of Gravity through multimessenger observations of gravitational waves” (Nakamura & Tanaka)

JSPS Grant-in-Aid for Scientific Research (A) No. 21244033  
“Cosmological perturbative gravitational phenomena” (Sasaki)

JSPS Grant-in-Aid for Scientific Research No. 23540282  
“Theory of Gravitational Waves from Fast Moving Sources, Strongly Gravitational Early Universe” (Futamase)



Our new assistant professor  
**Teruaki Suyama**

# Where to have lunch (A campus map is available.)

